THOMAS OTIS LE ROY, AND DAVID SMITH, PLAINTIFFS IN ERROR, *v.* BENJAMIN TATHAM, JUNIOR, GEORGE N. TATHAM, AND HENRY B. TATHAM.

In a patent for improvements upon the machinery used for making pipes and tubes from lead, or tin, when in a set, or solid state, by forcing it under great pressure, from out of a receiver, through apertures, dies, and cores, the claim of the patentees was thus stated: "What we claim as our invention, and desire to secure by letters-patent, is the combination of the following parts, above described, to wit, the core and bridge, or guide-piece, the chamber, and the die, when used to form pipes of metal, under heat and pressure, in the manner set forth, or in any other manner substantially the same."

The Circuit Court charged the jury, "that the originality did not consist in the novelty of the machinery, but in bringing a newly discovered principle into practical application, by which an useful article of manufacture is produced, and wrought pipe made as distinguished from cast pipe."

This instruction was erroneous.

Under the claim of the patent, the combination of the machinery must be novel. The newly discovered principle, to wit, that lead could be forced, by extreme pressure, when in a set or solid state, to cohere and form a pipe, was not in the patent, and the question whether it was or was not the subject of a patent, was not in the case.

Mr. Justice Curtis, having been of counsel for the defendants in error, upon the letters-patent drawn in question in this case, did not sit at the hearing.

This case was brought up, by writ of error, from the Circuit Court of the United States for the Southern District of New York.

The declaration was filed by the defendants in error, on the 8th of May, 1817, to recover damages in a plea of trespass upon the case, from the plaintiffs in error, and Robert W. Lowber, for the alleged infringement of their patent, for new and useful improvements in machinery, or apparatus for making pipes and tubes from metallic substances.

The declaration alleged, that John and Charles Hanson, of Huddersfield, England, were the inventors of the alleged improvements, on or before the 31st of August, 1837.

That on the 10th of January, 1840, the Hansons, assigned, in writing, to H. B. and B. Tatham, (two of the defendants in error,) the full and exclusive right to the said improvements.

That on the 29th of March, 1841, letters-patent of the United States were granted to H. B. & B. Tatham, as assignees of the Hansons, for the said improvements.

That on the 12th of October, 1841, H. B. & B. Tatham, assigned to G. N. Tatham, (the remaining defendant in error,) one undivided third part of the said letters-patent.

That, on the 14th of March, 1846, the said letters-patent having been surrendered, on account of the defective specifications

of the said improvements, new letters-patent were issued therefor, on an amended specification, whereby there was granted to the plaintiffs below, their heirs, &c., for the term of fourteen years from the 31st of August, 1837, the full and exclusive right of making, vending, &c., the said improvements; a description whereof was annexed to and made a part of such patent.

That the letters-patent were of the value of $50,000; and that the defendants below had wrongfully and unlawfully made, used, and vended the said improvements, and made lead pipe to the amount of 2,000 tons, thereby to the injury of the plaintiffs, $20,000.

To this declaration, the defendants, Le Roy and Smith, pleaded not guilty; the defendant, Lowber, making no defence, and permitting a default to be taken against him.

The cause was tried at the April Term, 1849, and a verdict rendered by the jury in favor of the plaintiffs, for $11,394, and costs, and a bill of exceptions was tendered by the defendants below.

On the trial of the cause below, the plaintiffs produced, —

1. Their patent of 1846, and the specification referred to therein, and making a part of the same.

2. They read in evidence certain agreements between the defendant, Lowber, and the defendants, Le Roy and Smith.

3. They gave evidence, tending to prove that J. & C. Hanson were the original and first inventors of the improvement; that the invention was a valuable one, &c.

4. That lead, recently become set, under heat and pressure, in a close vessel, would reunite perfectly after a separation of its parts; that, in the process described in the said patent, pipe was so made; that the Hansons were the first and original discoverers thereof; and that such discovery, and its reduction to a practical result, in the mode described in the patent, was useful and important.

5. That the defendants, Smith and Leroy, had been jointly engaged with Lowber in making lead pipe upon the plan described in the letters-patent, and selling the same, and had thus made and sold large quantities of pipe; that the agreement between them, relative to the manufacture of pipe, was colorable only, and was made as a cover to protect Le Roy and Smith, and throw the responsibility on the defendant, Lowber, who was insolvent.

6. That the improvement described in the said letters-patent was the same invention for which letters-patent had been granted to the Hansons, in England, and to H. B. & B. Tatham, here, as their assignees.

7. That the plaintiffs had been ready, and had offered to sell

the said invention, and had sold the same for a large portion of the United States, within the last eighteen months.

The defendants below then read in evidence,—

1. The description of the English patent to the Hansons.

2. The patent to H. B. & B. Tatham, of 1841, and the specification thereof.

3. The specification of an English patent, granted to Thomas Burr, of 11th April, 1820.

4. The patent and specification of Burroughs Titus, granted in 1831.

5. The patent granted to George W. Potter, in 1833.

6. The evidence of George Fox, tending to show the invention and use by him of a similar machine, in 1830.

7. The specification of a patent to John Hague, in 1822.

8. The specification of a patent granted to Busk & Harvey, in 1817.

9. The specification of a patent granted to Ellis & Burr, in 1836.

10. The specification of a patent granted to Joseph Bramah, in 1797.

11. The defendants then gave evidence tending to prove that J. & C. Hanson were not the original and first inventors of the combination of machinery described in the letters-patent.

12. That the invention was not useful, nor the lead pipe, made upon the plan described, good.

13. That the combination of machinery described in public works, as having been invented by Titus, Potter, Fox, Hague, Bramah, and Busk & Harvey, were substantially the same as that described in the plaintiffs' patent.

14. That lead, when recently become set, under heat and extreme pressure, in a close vessel, would not reunite perfectly after a separation of its parts; and that, in the process as described in the plaintiffs' patent, it was not in a set, but in a fluid state when it passed the bridge.

15. That the defendants, Le Roy & Smith were not concerned in the manufacture of the pipe, or in making or using the machinery; that it was made for them by the defendant, Lowber, at a certain price per hundred pounds; and that they had not infringed upon the patent of the plaintiffs.

16. That the improvement described in the plaintiff's patent, of 1846, was not the same invention as that for which letters-patent had previously been granted to the Hansons, and to H. B. & B. Tatham.

17. That, for the space of eighteen months, from the date of the patent of 1841, the plaintiffs had neglected to put and continue on sale to the public, on reasonable trust, the invention or discovery for which the said patent issued.

The evidence being closed, the case was argued before the jury, after the court had given the charge, which will be presently stated. The jury found a verdict for the plaintiffs, which, when increased by the court, amounted to $11,748.60. The following bill of exceptions brought up the rulings of the court upon the several points made:

The evidence being closed, the Judge charged the jury

That the first question which it was material to determine was, what was the invention or discovery of John and Charles Hanson, for which their patent had issued, as the precise character of that invention had been the subject of controversy on the trial.

The patentees state in their specification, that the invention consists in certain improvements upon, and additions to, machinery for making pipes of metal, capable of being pressed, as described in Burr's patent, dated April 11, 1820. They then describe Burr's apparatus, and the process by which the pipe was made by it, and state the defects of that plan, in consequence of which, they say, it failed to go into general use.

These defects they claim to have overcome and remedied; and state that they had found that lead, and some of its alloys, when just set, or short of fluidity, and under heat and great pressure, in a close vessel, would reunite, after a separation of its parts, as completely as if it had not been separated, or, in other words, that, under these circumstances, it could be welded.

That, on this discovery, and in reference to and in connection with it, they made a change in the machinery of Burr, by which they succeeded in making perfect pipes, and were enabled to use a bridge at the end of the cylinder and short core, and thus surmount the difficulty of the Burr machine.

They also state, that they do not claim any of the parts — the cylinder, core, die, or bridge; but that they claim the combination when used to form pipes of metal, under heat and pressure, in the way they have described.

There can be no doubt that, if this combination is new, and produces a new and useful result, it is the proper subject of a patent. The result is a new manufacture.

And even if the mere combination of machinery in the abstract is not new, still, if used and applied in connection with the practical development of a principle, newly discovered, producing a new and useful result, the subject is patentable. To which last opinion and decision, the counsel for the defendants did then and there except.

In this view, the improvement of the plaintiffs is the application of a combination of machinery to a new end, — to the

development and application of a new principle, resulting in a new and useful manufacture.

That the discovery of a new principle is not patentable; but it must be embodied and brought into operation by machinery, so as to produce a new and useful result.

Upon this view of the patent, it is an important question, for the jury to determine, from the evidence, whether the fact is established on which the alleged improvement is founded, that lead, in a set or semi-solid state, can thus be reunited or welded after separation.

The Judge here commented briefly upon the testimony, referring to the experiments which were testified to, and the results of which were exhibited to the jury, on the part of the plaintiffs and defendants, and, in continuation, stated:

That there was one experiment which was testified to by Mr. Keller, and the result of which was shown to the jury, which was made under circumstances that seem not to be subject to any misapprehension, and which, if he is not mistaken, and his testimony is correct, would seem to settle the question. But this was a question of fact, to be decided by the jury on the evidence. Hereupon, the counsel for the defendants excepted to this part of the charge of the Judges. — That it had been objected, that the improvement described in the patent of March 14, 1846, was different from that of March 29, 1841. The act only authorized a reissue for the same invention, the first specification being defective. — That he had compared the descriptions contained in the two patents, and, though the language was in some parts different, it would be found that the improvement was substantially the same, and that he therefore apprehended they would have no great difficulty in this branch of the case; to which the defendants' counsel excepted. — That it was also objected, that the plaintiffs' patent was invalid, for want of originality; that the invention had been before described in public works, and Bramah, Hague, Titus, Fox, and Potter, were relied on by the defendants. — That, in the view taken by the court, in the construction of the patent, it was not material whether the mere combinations of machinery referred to were similar to the combination used by the Hansons; because the originality did not consist in the novelty of the machinery, but in bringing a newly-discovered principle into practical application, by which a useful article of manufacture is produced, and wrought pipe made, as distinguished from cast pipe. Hereupon the defendants' counsel excepted.

That in the patents referred to, from the year 1797 to 1832, the combination which was claimed to be identical, was confessedly used for making pipe, by casting with fluid lead in a

mould, and after it was set by the application of water, forcing it out.

And the question is, whether any of these inventions are substantially the same as the plaintiffs'; whether, even if by these modes pipe had been successfully made for common use, it would have been made in the same manner as the Hansons'; to which opinion the counsel for the defendants excepted.

That it was further objected that the patentees have forfeited their rights, on account of having omitted to put and continue the invention on sale within eighteen months after the patent was granted, upon reasonable terms. The Judge here commented upon the testimony on this part of the case, and in continuation said:

That it was not essential, under the section of the statue referred to, that the patentees should take active means for the purpose of putting their invention in market, and forcing a sale, but that they should at all times be ready to sell at a fair price, when a reasonable offer was made.

That it was for the jury to say whether it was put and continued on sale, under this view of the law; to which opinion the counsel for the defendants excepted.

That the defendants, LeRoy, and Smith, contend that they have not infringed the plaintiffs' patent; that they were but the purchasers of the pipe, and that Lowber was the manufacturer, under the agreement which has been read.

The Judge here referred to the evidence on this branch of the case, and said:

That if the contract made by the defendants with Lowber, was *bonâ fide*, and they had no connection with the manufacture of the articles, except to furnish lead and pay him a given price, deducting the expenses; and if the contract was in fact carried out and acted upon in that manner, then the defendants would not be liable. But if the agreement was only colorable, and was entered into for the purpose of deriving the benefit and profits of the business, without assuming the responsibility for the use of the invention, and for the purpose of throwing the responsibility on Lowber, who was insolvent, then they were as responsible as he was.

That aiding and assisting a person in carrying on the business and in operating the machinery, would implicate the parties so engaged. If, therefore, these defendants participated actively in conducting the machine, directing and supervising its operations; if the evidence establishes that position, then, as aiding and assisting, they are as responsible as Lowber, (to which last opinion and decision the defendants' counsel excepted.)

Prior to the giving of the preceding charge to the jury, the defendants' counsel requested the court to instruct them according to the following written proposition submitted; and his honor, after he delivered the said charge, took up the said propositions in their order, and gave the instructions to the jury, which are respectively subjoined thereto.

Proposition I. If the jury believe that the agreements executed on the 13th of April and 13th of May, 1846, by which Lowber, as manufacturer, was to make the pipe for LeRoy & Co., on his machine, at 55 cents the 100 pounds, was real and *bonâ fide*, on an actual dissolution of the partnership of Lowber & LeRoy, and not colorable to throw the responsibility of working the machine on Lowber alone, then the plaintiffs cannot recover.

Upon which, his honor said that he had already given all the instructions he deemed necessary on that point; the proposition was correct, and it was for the jury to decide that fact.

Proposition II. That even if the Tathams first introduced the pipe in question in this country, as an article of commerce, that does not give them any right to recover, unless the patents under which they claim were good and valid, for an invention not before known, used, or described in a public work.

Upon which his honor instructed the jury, as requested by the defendants' counsel.

Proposition III. That if the jury believe that the combination patented by the plaintiffs was before patented by Burroughs Titus, or any one else in this country, or patented and described in a well known public work abroad, the plaintiffs cannot recover, although such machines thus patented were not actually put in operation, so as to make pipe for the public.

Upon which his honor instructed the jury that he had already stated to them that the plaintiffs' invention did not consist in the mere combination of machinery, and, therefore, if those patents were for casting lead pipe, the point was not material; that it was not necessary that they would have made pipe for public use to defeat a subsequent patent. To which instruction, and refusal to instruct the jury as requested, the defendants' counsel excepted.

Proposition IV. That the Tatham patent is void on its face, the Burr machine having the entire combination, including heat and pressure, and the lead in a set state. The patent is void for claiming too much; should only have been for the improvement, viz. substituting the bridge and short core for the long core, and not for the whole combination.

His honor declined to give this instruction, to which the defendants' counsel excepted.

Proposition V. That the bridge and short core having been before patented in this country by Burroughs Titus, and also before used in other machines, no claim could be made for introducing into Burr's combination such bridge.

Upon which his honor instructed the jury as follows: Undoubtedly that is so, but that is not the plaintiffs' claim.

Proposition VI. That the state of the lead, when used as described in the plaintiffs' specification, being a principle of nature, is not the subject of a patent, either alone or in combination with the machine mentioned in that specification.

To which his honor stated, the first part of the proposition was correct, and the latter part not; and the defendants' counsel excepted.

Proposition VII. That the using of a metal in a certain state, or at a certain temperature, alone, or in combination with a machine, was not the subject of a patent.

To which his honor stated, I have already instructed the jury that the invention, as described by the Hansons, is a patentable subject; to which the defendants' counsel excepted.

Proposition VIII. That if the jury believe that the combination of cylinder, piston, bridge, short core, die, and chamber, under heat and pressure, was before patented in this country, by Burroughs Titus, then the plaintiffs cannot recover.

Whereupon, his honor instructed the jury, that novelty in the mere combination of the machinery was not essential to the plaintiffs' right to recover, except as connected with the development and application of the principle before mentioned; to which the defendants' counsel excepted.

Proposition IX. That if the jury believe that the same combination of cylinder, piston, bridge, short core, die, and chamber, under heat and pressure, had before been patented in England, by Bramah, and published in a well known work, then the plaintiffs cannot recover.

His honor instructed the jury, that Bramah's patent and the Tathams' were not identical, and declined to instruct them as requested; to all which the defendants' counsel excepted.

Proposition X. That if the jury believed that the Burr, Bramah, Titus, and Hague machines, or either of them, were published to the world in well known public works, and had the same combination, in whole or in part, as the Hanson machine, up to a certain point, the Tathams' patent is void, for claiming too much, viz. the whole combination.

His honor instructed the jury, that he had explained to them his views on that part of the case, and declined to instruct them as requested, in the form of which the proposition was stated; and to which the defendants' counsel excepted.

Proposition XI. That the reissue of the patent of 1846, on which alone the plaintiffs can claim, was not warranted by the patent of 1841, it being for a different, and not the same invention, misdescribed by inadvertence, accident, or mistake; and, in fact, was a new patent, under color of a reissue.

That if the jury believe that the reissue of 1846 was for a different invention from the patent of 1841, and not for the same invention, misdescribed by inadvertence, accident, or mistake, then the plaintiffs cannot recover.

His honor declined to instruct the jury according to the first branch of this proposition, to which the defendants' counsel excepted; but did instruct them in the affirmative, upon the last branch thereof.

Proposition XII. That if the jury believe that the combination patented, was before described in some well known public work, either in this country or in England, the plaintiffs cannot recover, although such machine, or the pipe made by it, was never introduced in this country.

Upon which his honor instructed the jury in the affirmative.

Proposition XIII. If the jury believe that the combination claimed was before known or used, to make lead pipe, by others than the Hansons or the Tathams, the plaintiffs are not entitled to recover, no matter how limited such knowledge or use was, if the invention was not kept secret.

Upon which his honor instructed the jury in the affirmative.

Proposition XIV. That if the Maccaroni machine, or the Busk and Harvey clay-pipe machine, contained the same combination as the plaintiffs' machine, that the plaintiffs cannot recover, by reason of applying the same combination to a new use.

Which instructions his honor declined to give, and stated that he had explained to them his views on that subject; and the defendants' counsel excepted.

Proposition XV. That if the jury believe that Mr. Lowber's machine was used by his men when the lead was in a fluid, and not in a set, or solid state, then there was no infringement, and the plaintiffs cannot recover, if the plaintiffs' patent were valid.

Upon which his honor instructed the jury in the affirmative.

Proposition XVI. That the jury are the sole and exclusive judges, as questions of fact, whether the combination and process were the same in plaintiffs' machine as was in Bramah's, or in any other of the machines proved on the trial.

Upon which his honor charged the jury that this was so undoubtedly, subject, however, to the principles of law, as laid down in his preceding charge and instructions; to which the defendants' counsel excepted.

Proposition XVII. That if the jury believe that the lead, when it may be successfully used to make pipe with plaintiffs' machine, must not be in a set or solid state, as described in their specification, and that it can only be thus used in a fluid or pasty state, then that the patent is void, and the jury should find for the defendants, on the ground that the specification does not fairly and fully describe the nature of the invention claimed, nor the condition in which the lead should be used, so as to enable the public to ascertain the true nature of the invention, the manner of using the machine, and the condition in which the lead ought to be used.

Which instruction his honor answered in the affirmative.

The jury then retired to consider their verdict, under the said charge and instructions; and subsequently, on the 25th day of May, 1849, returned into court with a verdict for the said plaintiffs for $11,394 damages, and six cents costs.

And, inasmuch as the said several matters aforesaid, do not appear by the record of the said verdict, the said defendants' counsel did then and there request his honor, the said Judge, to put his seal to this bill of exceptions, containing the said several matters aforesaid; and his honor, the said Judge, did, in pursuance of the said request, and of the statute in such case made and provided, put his seal to this bill of exceptions, containing the said several matters aforesaid, at the city of New York, aforesaid, the same 25th day of May, 1849. S. NELSON.

The case was argued by *Mr. Gillett* and *Mr. Noyes*, with whom was *Mr. Barbour*, for the plaintiffs in error, and by *Mr. Cutting* and *Mr. Staples*, for the defendants in error.

The points made by the counsel for the plaintiffs in error, were the following.

1. In construing a patent, and deciding what are the inventions patented thereby, the summing up is conclusive. Nothing is patented but what is expressly claimed. Moody *v.* Fiske, 2 Mason, 112, 118; Rex *v.* Cutler, 1 Starkie, R. 354; Davies on Patents, 398, 404; Bovil *v.* Moore, 2 Marsh. R. 211; Wyeth *v.* Stone, 1 Story, R. 285; Hovey *v.* Stevens, 3 W. & M. 17.

2. What is described in a patent, and not claimed, whether invented by the patentee or not, is dedicated to the public, and cannot be afterwards claimed, as a part of his patent, in a reissue, or otherwise. Battin *v.* Taggart, Judges Kane and Grier, September 10, 1851; 6th section of act of 1836; Mellus *v.* Silsbee, 4 Mason, 111; Grant *v.* Raymond, 6 Pet. 218; Shaw *v.* Cooper, 7 Pet. 292, 322, 323; Pennock *v.* Dialogue, 2 Pet. 1, 16.

3. A patent void in part, is void in whole, except when other-

wise provided by statute. Wyeth *v.* Stone, 1 Story, R. 285, 273–293–4; Moody *v.* Fiske, 2 Mason, 118, 119; Woodcock *v.* Parker, 1 Gall. 438; Evans *v.* Eaton, 7 Wheat. 356; 5 Cond. R. 302, 314; Bovil *v.* Moore, Davies's Patents, 398; Id. 2 Marshall, 211; Hill *v.* Thompson, 3 B. Moore, 244; Bevinton *v.* Hawks, 4 B. & Ald. 541; Saunders *v.* Aston, 3 B. & Ald. 881; Kay *v.* Marshall, 5 Bing. N. C. 492; Gibson *v.* Brand, 4 M. & Gr. 178; McFarlane *v.* Price, 1 Starkie, 199; Minton *v.* Moore, 1 Nev. & P. 595; Rex *v.* Cutler, 1 Starkie, R. 359.

4. The Judge was bound to present to the consideration of the jury, as a question of fact, in the words of the statute, whether the patentee, being an alien, "had failed and neglected, for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms, the invention for which the patent issued." Tatham and others *v.* Loring, decision by Judge Story on this patent, cited on brief.

5. It was error in the Judge to instruct the jury that he had examined the surrendered and reissued patent, and found the improvement the same. He should have submitted the question, as one of fact, to the jury, for them to determine, upon the evidence, of the weight of which they were the exclusive judges. It was also error to instruct them that Bramah's and Tatham's patent were not identical. That was a question for the jury. Curtis, sec. 381; Carver *v.* Braintree, 2 Story, R. 432; Stimpson *v.* West Chester Railroad Co. 4 Howard, 381.

6. The question, whether the combination had been previously patented, or described in a printed publication, was one of fact, which should have been submitted to the jury.

7. Applying an old machine to a new use, or to produce a new result, is not the subject of a lawful patent. Boulton *v.* Bull, 2 H. Bl. 487; Lash *v.* Hague, Web. Pat. 207; Crane *v.* Price, 4 Mann. & Grang. 580; Huddart *v.* Grainshaw, Web. Pat. 8; Howe *v.* Abbott, 2 Story, R. 190, 193; Bean *v.* Smallwood, 2 Story, R. 408, 410; Hovey *v.* Stevens, 1 Wood. & M. R. 290, 297, 298; Kay *v.* Marshall, 5 Bing. N. C. 492, (35 Com. Law R. p. 194, 197, 198); Gibson *v.* Brand, 4 Mann. & Grang. 179, (43 Com. Law, 100, 110); Hotchkiss *v.* Greenwood, 11 Howard, 248, 266; Curtis, § 26, 27.

8. Making an addition to an old combination does not authorize a patent for the whole combination. Such a patent would be broader than the invention, and void.

Act 1836, sec. 6. Hindmarch on Pat. 184, 190, and cases cited; Basil *v.* Gibbs, Davies's Pat. 398, 413; Whittemore *v.* Cutler, 1 Gall. 478; Barrett *v.* Hall, 1 Mason, 447, 474; Moody *v.* Fiske, 2 Mason, 117; Prouty *v.* Draper, 1 Story, R. 568; Howe *v.* Abbott, 2 Story, R. 190; Brooks *v.* Jenkins, 3 McLean, 433;

Evans v. Eaton, 1 Pet. C. C. R. 322; Curtis, sect. 8, 9, 10, 11; Brooks v. Bicknell, 4 McLean, 64, 73; Root v. Ball, 4 McLean, 177, 180; Parker v. Haworth, 4 McLean, 370, 373; Prouty v. Ruggles, 16 Pet. 336, 341; Evans v. Eaton, 7 Wheat. 356; 5 Cond. R. 302, 314.

9. The plaintiffs, Henry B. and Benjamin Tatham, not being inventors, were not authorized to surrender the patent granted to them as assignees, and receive a reissued patent thereon. Patent act of 1837, sec. 6.

10. The reissued patent is void, because issued to a party who was neither an original inventor, nor his assignee. Act of 1837, sec. 6.

11. Neither a principle nor an effect can be patented, but a patent must be for a mode of embodying the former to produce the latter, invented by the patentee. Kemper's case, by Chief Justice Cranch, in Curtis on Pat. 500; Wyeth v. Stone, 1 Story, R. 285; Hill v. Thompson, 8 Taunton, 375; S. C. 4 Com. L. R. 151; Brunton v. Hawks, 4 Barn. & Ald. 541; S. C. 6 Com. L. R. 509; Moody v. Fiske, 2 Mason, 118; Whittemore v. Cutler, 1 Gall. 478, 480; Stone v. Sprague, 1 Story, R. 270. 272; Blanchard v. Sprague, 3 Sumner, 535, 540; S. C. 2 Story, R. 164, 194; Howe v. Abbott, 2 Story, R. 194; Smith v. Downing, decided in 1850 by Judge Woodbury; Detmould v. Reeves, Grier and Kane, Judges, 1851; Boulton v. Watt, 2 H. Bl. 453; S. C. Davis on Pat. 162, 192.

The counsel for the defendants in error made the following points:

No exception was taken to the admission or exclusion of testimony; but solely to the Judge's charge.

The invention for which the patent was granted consisted in the discovery, that, under certain conditions, and by the use and application of certain methods, lead, and some of its alloys, while in a set state, could, after being separated into parts, be re-united and welded, and thus formed into pipe; and also of the mode of doing this; producing thereby a new article of manufacture, wrought lead pipe—avoiding the objections which had always prevented success in casting pipe; and by this discovery overcoming the defects of Burr's method, on which this was an improvement.

The patentees, in describing the invention, say that they "have found from experience that lead and some of its alloys, when recently become set, or in a condition just short of fluidity, being still under heat and extreme pressure, in a close vessel, will reunite perfectly after a separation of its parts," and that, therefore, they construct their machinery as follows — and

then proceed to describe the machinery or apparatus, as adapted by them to this discovery, and by which they produce the practical result above stated.

After describing the apparatus and the modes of using it, the patentees repeat, "that the remarkable feature of their invention is, that soft metals, when in a set state, being yet under heat can be made, by extreme pressure, to reunite perfectly, around a core after a separation, and thus be formed into strong pipes or tubes."

And "that the essential difference in the character of this pipe, distinguishing it from all others before made, was, that it was wrought under heat by pressure and constriction from set metal; and that it is not a casting formed in a mould."

And they close by claiming, as their invention, "the combination described by them, when used to form pipes of metal under heat and pressure in the manner set forth."

The Judge, in his charge, in commenting on the patent, states the invention to be substantially as above stated; and to this construction and view of the patent, no exception was taken by the defendants.

The court then proceed further to instruct the jury, and in answer to certain propositions submitted by the plaintiffs in error for the consideration of the court.

I. The first proposition laid down by the court, is, that the mere combination of machinery, not new, in the abstract, when combined with and applied to the practical development of a new principle, to produce a new and useful result, may be the subject of a valid patent. This principle is repeated several times, in different connections, in the course of the charge to the jury; and as often excepted to by the counsel for the defendants.

The counsel for the defendants in error, insist that the above position is correct, and supported by principle, by precedent, and by practice.

1. The position is supported by principle, founded on the statutes giving patents to inventors. He who discovers a new principle, and points out the means of applying it, to produce a new and useful result, comes within the settled construction of the English act, giving a patent for the sole working of any manner of new manufactures. See 6th section of the act 21 James 1, (1623.) By our patent law, any person, having invented or discovered any new manufacture, &c., is entitled to a patent. See 6th section of the act 4th July, 1836. The term new manufacture includes not only the thing produced, but the means of producing it.

2. This principle is supported by authority. Curtis, Pat. § 9 §§ 71 to 91; also chap. 2, pp. 57 to 94, and cases there cited

Earl Dudley's patent for the use of pea or pit coal, in the manufacture of iron. 1 Carpmael, 15; Webster's Patent Cases, 14, S. C. — Nielson's patent for the hot air blast, in connection with common bituminous pit coal, in the manufacture of iron. 8 Mees. & Welsb. 806 to 825; A. D. 1841; Nielson *v.* Hartford, &c., Web. Pat. Ca. 295, 328, and 328 to 373; A. D. 1841; S. C. 374. — Crane's patent for the hot air blast, in connection with anthracite coal. Crane's patent, Web. Pat. Cas. 375; date 1836. Crane *v.* Price, &c.; Webs. Pat. Cas. 377, 393; A. D. 1842, S. C. 4 Mann. & Grang. 380; S. C. 43 Eng. Com. L. R. 301; S. C. 2d vol. Frank. J. for year 1851, p. 388; French, &c. *v.* Rogers, &c. 394 to 397, and cases there cited by the court. 6 Eng. Law and Equity Rep. 536, overruling 2 Carrington & Kirwan, cited *vs.* Leon. 43, 47, 52; Curtis, 81 a.; Webster, 229, note.

II. The second exception by the defendants' counsel is to the charge of the court, in relation to Mr. Keller's evidence.

It is difficult to see upon what ground this exception of the defendants to the charge of the court is founded. After remarking upon the character and weight of the fact testified to, the whole is submitted to the jury for their decision.

III. The third exception taken to the charge of the court is found in the next two paragraphs on the same page, and relates to the reissued patent. The same is repeated in the call of the defendants, in their eleventh proposition, upon which they ask the court to instruct the jury.

The substance of the charge, as given in both instances, is, that the language in one patent was in some parts different from that in the other, but the meaning was substantially the same in both. That the reissued patent must be for the same invention as the first; and the matter of fact was left to the jury.

IV. The next exception is to the charge of the court, as found at the top of the 42d page of the case, and is as follows:

"That in the patents referred to, from the year 1797 to 1832, the combination which was claimed to be identical, was confessedly used for making pipe, by casting with fluid lead in a mould, and after it was set, by the application of water, forcing it out.

"And the question is, whether any of these inventions are substantially the same as the plaintiffs'; whether, even, if by these modes, pipe had been successfully made for common use, it would have been made in the same manner as the Hansons'; to which opinion, the counsel for the defendants excepted."

Whether the modes referred to by the court, of manufacturing pipe, were the same or different, was a question of fact left to

the jury; and the court did not, by the manner of stating the point, withdraw it from the consideration of the jury.

V. The fifth exception relates to the charge of the court, as to the duty of the plaintiffs to put and keep the invention on sale on reasonable terms, and they say that it was not essential that the patentees should take active means for the purpose of putting their invention in market, and forcing a sale; but that they should at all times be ready to sell at a fair price, when a reasonable offer was made.

That it was for the jury to say whether it was put and continued on sale, under this view of the law — to which the counsel for the defendants excepted.

We insist that the court took a correct view of the statute, and properly submitted the question of fact to the jury; and that the exception is not well taken.

VI. The next exception in the order in which the defendants in error have noticed them, relates to the instructions of the court, in relation to the liability of Le Roy and Smith jointly, with the other defendant, Lowber.

It seems, to the counsel for the defendants in error, that the question was properly submitted to the jury, as a question of fact, how far Le Roy and Smith had made themselves liable with Lowber. The defendants in error insist that the exception to this part of the charge is not well taken.

VII. In answer to the fourth proposition, on which the court was requested to instruct the jury that Tatham's patent was void on its face, &c. We say that the charge of the court was correct. The patentees in Tatham's patent have pointed out clearly what they claim, and what they do not claim.

VIII. In their ninth proposition, the defendants requested the court to instruct the jury —

"That if they believed the same combination of cylinder, piston, bridge, short core, die, and chamber, under heat and pressure, had before been patented in England by Bramah, and published in a well known work, then the plaintiffs cannot recover."

Upon this proposition the court instructed the jury, that Bramah's patent and the Tathams' were not identical; and declined to instruct the jury as requested. To which the counsel for the defendants excepted. This request by the defendants for the above instruction was based on the assumption of a fact not proved and not true, and was correctly refused.

IX. The defendants requested the court to instruct the jury according to their tenth proposition, which is as follows — "That if the jury believe that the Burr, Bramah, Titus, and Hague machines, or either of them, were published to the world in well

known public works, and had the same combination, in whole or in part, as the Hanson machine, up to a certain point, the Tathams' patent is void for claiming too much, viz., the whole combination; and the court thereupon instructed the jury, that they had explained their views on that part of the case, and declined to instruct them as requested in the form in which the proposition was stated." To which the counsel for the defendants excepted, and the defendants in error insist that this exception is not well taken.

X. The sixteenth proposition, on which the court was requested to instruct the jury, is in the following words, namely,—

"That the jury are the sole and exclusive judges as to the questions of fact, whether the combination and process were the same in the plaintiffs' machine as was Bramah's, or in any other of the machines proved on the trial. And thereupon the court instructed the jury, that this was so undoubtedly; subject, however, to the principles of law as laid down in the preceding charge and instructions." To which the counsel for the defendants excepted.

The defendants in error insist that none of the exceptions aforesaid are well taken; and that said judgment should be affirmed, with costs and damages.

Mr. Justice McLEAN delivered the opinion of the court.

This is a case on error, from the Circuit Court of the Southern District of New York.

The action was brought in the Circuit Court, to recover damages for an alleged infringement of a patent for new and useful improvements in machinery for making pipes and tubes from metallic substances.

The declaration alleged that John and Charles Hanson, of England, were the inventors of the improvements specified, on or prior to the 31st of August, 1837; that on the 10th of January, 1840, the Hansons assigned to H. B. and B. Tatham, two of the defendants in error, the full and exclusive right to said improvements; that, on the 29th of March, 1841, letters-patent were granted for the improvements to the Tathams, as the assignees of the Hansons; that, afterwards, H. B. and B. Tatham assigned to G. N. Tatham, the remaining defendant in error, an undivided third part of the patent.

On the 14th of March, 1846, the said letters-patent were surrendered, on the ground that the specifications of the improvements claimed were defective, and a new patent was issued, which granted to the patentees, their heirs, &c., for the term of fourteen years, from the 31st of August, 1837, the exclusive right to make and vend the improvements secured. The

declaration states, the patent was of the value of fifty thousand dollars; and that the defendants below had made and vended lead pipe to the amount of two thousand tons, in violation of the patent, and to the injury of the plaintiffs twenty thousand dollars.

The defendants pleaded not guilty; the defendant Lowber did not join in the plea, but permitted judgment to be entered against him by default. On the trial, certain bills of exceptions were taken to the instructions of the court to the jury, on which errors are assigned.

The schedule, which is annexed to the patent, and forms a part of it, states that the invention consists "in certain improvements upon, and additions to, the machinery used for manufacturing pipes and tubes from lead or tin, or an alloy of soft metals capable of being forced, by great pressure, from out of a receiver, through or between apertures, dies, and cores, when in a set or solid state, set forth in the specification of a patent granted to Thomas Burr, of Shrewsbury, in Shropshire, England, dated the 11th of April, 1820." After describing Burr's machine, its defects, and the improvements made on it as claimed, the patentees say, "Pipes thus made are found to possess great solidity and unusual strength, and a fine uniformity of thickness and accuracy of bore is arrived at, such as, it is believed, has never before been attained by any other machinery."

"The essential difference in the character of this pipe, which distinguishes it, as well as that contemplated by Thomas Burr, from all other heretofore known or attempted, is that it is wrought under heat, by pressure and constriction, from set metal; and that it is not a casting formed in a mould."

And they declare, "We do not claim as our invention and improvement, any of the parts of the above-described machinery, independently of its arrangement and combination above set forth. What we do claim as our invention, and desire to secure, is, the combination of the following parts above described, to wit: the core and bridge, or guide-piece, with the cylinder, the piston, the chamber and the die, when used to form pipes of metal, under heat and pressure, in the manner set forth, or in any other manner substantially the same."

The plaintiffs gave in evidence certain agreements between the defendants, showing the manufacture of lead pipe by the defendant Lowber, for the defendants Le Roy and Smith. And also evidence tending to prove that the said John Hanson and Charles Hanson were the original and first inventors of the improvement described in the said letters-patent; that the invention and discovery therein described was new and useful; that the lead pipe manufactured thereby, was superior in quality

and strength, capable of resisting much greater pressure, and more free from defects, than any pipe before made; that in all the modes of making lead pipe, previously known and in use, it could be made only in short pieces, but that by this improved mode it could be made of any required length, and also of any required size; and that the introduction of lead pipe, made in the mode described, had superseded the use of that made by any of the modes before in use, and that it was also furnished at a less price."

"And the plaintiffs also gave evidence tending to prove that lead, when recently become set, and while under heat and extreme pressure in a close vessel, would reunite perfectly, after a separation of its parts; and that in the process described in the said patent, lead pipe was manufactured by being thus separated and reunited; and that the said John and Charles Hanson were the first and original discoverers thereof; and that such discovery, and its reduction to a practical result in the mode described in said letters-patent, was useful and important."

"And the plaintiffs also gave evidence, conducing to prove that the improvement, described in the letters-patent, was the same invention and discovery which had been made by the said John and Charles Hanson, and for which letters-patent had been granted to them in England, and subsequently in this country, to the Tathams, as recited in the letters-patent."

"And the plaintiffs also gave evidence conducing to prove that they had been ready and willing, and had offered to sell the said invention, within eighteen months succeeding the issuing of said letters-patent to them, and also since; and had, within the said eighteen months, sold the same for a large portion of the United States."

The defendants' counsel then read in evidence from the "Repertory of Arts," vol. 16, page 314, the description of the patent to the Hansons, dated August 31, 1837. They also read in evidence the patent issued upon the application of the plaintiffs to the Patent Office, containing another specification, which was annexed to the patent surrendered. And also they read the specification of Thomas Burr's patent, of April 11, 1820. Also a patent granted to George W. Potter, described in the 12th "Franklin Journal of Arts," published in 1833; they also read the specification of a patent granted in England, to Bush and Harvey, on December 5th, 1817; and also the specification of a patent granted in England to Joseph Bramah, October 31st, 1797.

Evidence was also given, to show that the combination of machinery for making lead pipe, described in public works as

having been invented by Burroughs Titus, by George W. Potter, by Jesse Fox, by John Hague, and by Joseph Bramah, were substantially the same as that used by the plaintiffs; that the combination of machinery, patented as herein before stated, by Bush and Harvey, for making pipes of clay, and that used for making maccaroni, were substantially the same as that described in the plaintiffs' patent.

In their charge to the jury, the court said, "They, the plaintiffs, also state, that they do not claim any of the parts of the machinery, the cylinder, core, die, or bridge, but that they claimed the combination when used to form pipes of metal, under heat and pressure, in the way they have described. There can be no doubt that if this combination is new, and produces a new and useful result, it is the proper subject of a patent." "The result is a new manufacture. And even if the mere combination of machinery in the abstract is not new, still, if used and applied in connection with the practical development of a principle, newly discovered, producing a new and useful result, the subject is patentable. In this view, the improvement of the plaintiffs is the application of a combination of machinery to a new end; to the development and application of a new principle, resulting in a new and useful manufacture. That the discovery of a new principle is not patentable, but it must be embodied and brought into operation by machinery, so as to produce a new and an useful result. Upon this view of the patent, it is an important question for the jury to determine, from the evidence, whether the fact is established, on which the alleged improvement is founded, that lead in a set, or semi-solid state, can thus be reunited or welded, after separation." To this instruction the defendants excepted.

It was also objected, that the plaintiffs' patent was invalid for want of originality; that the invention had been before described in public works, and Bramah, Hague, Titus, Fox, and Potter, were relied on by the defendants.

To this it was replied, by the court, "That in the view taken by the court in the construction of the patent, it was not material whether the mere combinations of machinery referred to were similar to the combination used by the Hansons, because the originality did not consist in the novelty of the machinery, but in bringing a newly discovered principle into practical application, by which a useful article of manufacture is produced, and wrought pipe made as distinguished from cast pipe." To this charge there was also an exception.

The word *principle* is used by elementary writers on patent subjects, and sometimes in adjudications of courts, with such a want of precision in its application, as to mislead. It is ad-

mitted, that a principle is not patentable. A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right. Nor can an exclusive right exist to a new power, should one be discovered in addition to those already known. Through the agency of machinery a new steam power may be said to have been generated. But no one can appropriate this power exclusively to himself, under the patent laws. The same may be said of electricity, and of any other power in nature, which is alike open to all, and may be applied to useful purposes by the use of machinery.

In all such cases, the processes used to extract, modify, and concentrate natural agencies, constitute the invention. The elements of the power exist; the invention is not in discovering them, but in applying them to useful objects. Whether the machinery used be novel, or consist of a new combination of parts known, the right of the inventor is secured against all who use the same mechanical power, or one that shall be substantially the same.

A patent is not good for an effect, or the result of a certain process, as that would prohibit all other persons from making the same thing by any means whatsoever. This, by creating monopolies, would discourage arts and manufactures, against the avowed policy of the patent laws.

A new property discovered in matter, when practically applied, in the construction of a useful article of commerce or manufacture, is patentable; but the process through which the new property is developed and applied, must be stated, with such precision as to enable an ordinary mechanic to construct and apply the necessary process. This is required by the patent laws of England and of the United States, in order that when the patent shall run out, the public may know how to profit by the invention. It is said, in the case of the Househill Company *v.* Neilson, Webster's Patent Cases, 683, "A patent will be good, though the subject of the patent consists in the discovery of a great, general, and most comprehensive principle in science or law of nature, if that principle is by the specification applied to any special purpose, so as thereby to effectuate a practical result and benefit not previously attained." In that case, Mr. Justice Clerk, in his charge to the jury, said, "the specification does not claim any thing as to the form, nature, shape, materials, numbers, or mathematical character of the vessel or vessels in which the air is to be heated, or as to the mode of heating such vessels," &c. The patent was for "the improved application of air to produce heat in fires, forges and furnaces, where bellows or other blowing apparatus are required."

In that case, although the machinery was not claimed as a part of the invention, the jury were instructed to inquire, "whether the specification was not such as to enable workmen of ordinary skill to make machinery or apparatus capable of producing the effect set forth in said letters-patent and specification." And, that in order to ascertain whether the defendants had infringed the patent, the jury should inquire whether they, "did by themselves or others, and in contravention of the privileges conferred by the said letters-patent, use machinery or apparatus substantially the same with the machinery or apparatus described in the plaintiffs' specification, and to the effect set forth in said letters-patent and specification." So it would seem that where a patent is obtained, without a claim to the invention of the machinery, through which a valuable result is produced, a precise specification is required; and the test of infringement is, whether the defendants have used substantially the same process to produce the same result.

In the case before us, the court instructed the jury that the invention did not consist "in the novelty of the machinery, but in bringing a newly discovered principle into practical application, by which a useful article of manufacture is produced, and wrought pipe made as distinguished from cast pipe."

A patent for leaden pipes would not be good, as it would be for an effect, and would, consequently, prohibit all other persons from using the same article, however manufactured. Leaden pipes are the same, the metal being in no respect different. Any difference in form and strength must arise from the mode of manufacturing the pipes. The new property in the metal claimed to have been discovered by the patentees, belongs to the process of manufacture, and not to the thing made.

But we must look to the claim of the invention stated in their application by the patentees. They say, "We do not claim as our invention and improvement any of the parts of the above described machinery, independently of their arrangement and combination above set forth." "What we claim as our invention, and desire to secure by letters-patent, is, the combination of the following parts above described, to wit, the core and bridge or guide-piece, the chamber, and the die, when used to form pipes of metal, under heat and pressure, in the manner set forth, or in any other manner substantially the same."

The patentees have founded their claim on this specification, and they can neither modify nor abandon it in whole or in part. The combination of the machinery is claimed, through which the new property of lead was developed, as a part of the process in the structure of the pipes. But the jury were instructed, "that the originality of the invention did not consist in the

novelty of the machinery, but in bringing a newly discovered principle into practical application." The patentees claimed the combination of the machinery as their invention in part, and no such claim can be sustained without establishing its novelty — not as to the parts of which it is composed, but as to the combination. The question whether the newly developed property of lead, used in the formation of pipes, might have been patented, if claimed as developed, without the invention of machinery, was not in the case.

In the case of Bean *v.* Smallwood, 2 Story, R. 408, Mr. Justice Story said, "He (the patentee) says that the same apparatus, stated in this last claim, has been long in use, and applied, if not to chairs, at least in other machines, to purposes of a similar nature. If this be so, then the invention is not new, but at most is an old invention, or apparatus, or machinery applied to a new purpose. Now I take it to be clear, that a machine, or apparatus, or other mechanical contrivance, in order to give the party a claim to a patent therefor, must in itself be substantially new. If it is old and well known, and applied only to a new purpose, that does not make it patentable."

We think there was error in the above instruction, that the novelty of the combination of the machinery, specifically claimed by the patentees as their invention, was not a material fact for the jury, and that on that ground, the judgment must be reversed. The other rulings of the court excepted to, we shall not examine, as they are substantially correct.

Mr. Justice Nelson, Mr. Justice Wayne, and Mr. Justice Grier dissented.

Mr. Justice NELSON—dissenting.

The patent in this case, according to the general description given by the patentees, is, for improvements upon, and additions to, the machinery or apparatus of Thomas Burr, for manufacturing pipes and tubes from metallic substances. They declare, that the nature of their invention, and the manner in which the same is to operate, are particularly described and set forth in their specification. In that, they refer to the patent of Burr of the 11th April, 1820, for making lead pipe out of set or solid lead by means of great pressure, the product being wrought pipe, as contradistinguished from cast, or pipe made according to the draw-bench system. The apparatus, as described by Burr, consisted of a strong iron cylinder, bored sufficiently true for a piston to traverse easily within it. This cylinder was closed at one end by the piston, and also closed at the other, except a small aperture for the die which formed the external diameter of the pipe. The core or mandril, which determined the inner

diameter, was a long cylindrical rod of steel, one end of which was attached to the face of the piston, extending through the centre of the cylinder, and passing also through the centre of the die at the opposite end, leaving a space around the core and between it and the die for the formation of the pipe. The metal to form the pipe was admitted into the cylinder in a fluid state, and when it become set or solid, the power of a hydraulic press was applied to the head of the piston, which, moving against the body of solid lead in the cylinder, drove it through the die, the long core advancing with the piston and with the body of lead through the die, and thus forming the pipe. The cylinder usually holds from three to four hundred pounds of lead, and continuous pipe is made till the whole charge is driven out.

This plan, though one of deserved merit, and of great originality, failed, when reduced to practice, except for the purpose of making very large pipe, larger than that usually in demand, and consequently passed out of general use. The long core attached to the face of the piston, advancing with it in the solid lead under the great pressure required, was liable to warp and twist out of a straight line, and out of centre in the die, which had the effect to destroy the uniformity of the thickness and centrality of the bore of the pipe.

The old mode, therefore, of making pipe by the draw-bench system, continued down to 1837, when the patentees in this case discovered, by experiment, that lead, when recently set and solid, but still under heat and extreme pressure, in a close vessel, would reunite after a separation of its parts, and "heal" (in the language of the patentees) "as it were by the first intention," as completely as though it had not been divided.

Upon the discovery of this property of lead, which had never before been known, but, on the contrary, had been supposed and believed, by all men of science skilled in metals, to be impossible, the patentees made an alteration in the apparatus of Burr, founded upon this new property discovered in the metal, and succeeded completely in making wrought pipe out of solid lead by means of the hydraulic pressure. The product was so much superior in quality to that made according to the old mode, that it immediately wholly superseded it in the market. The pipe was also made much cheaper.

The patentees, by their discovery, were enabled to dispense with the long core of Burr, and to fix firmly a bridge or cross bars at the end of the cylinder near the die, to which bridge they fastened a short core extending into and through the die. By this arrangement they obtained a firm, immovable core, that always preserved its centrality with the die, and secured the manufacture of pipe of uniformity of thickness of wall and

accuracy of bore, of any dimension. The lead after being admitted into the cylinder in a fluid state, was allowed to remain till it became solid, and was then driven by the piston through the apertures in the bridge into the chamber between it and the die, where the parts reunited, after the separation, as completely as before, and, passing out at the die around the fixed short core, formed perfect pipe.

The patentees state, that they do not intend to confine themselves to the arrangement of the apparatus thus particularly specified, and point out several other modes by which the same result may be produced, all of which variations would readily suggest themselves, as they observe, to any practical engineer, without departing from the substantial originality of the invention, the remarkable feature of which, they say, is, that lead, when in a set state, being yet under heat, can be made, by extreme pressure, to reunite perfectly around a core after separation, and thus be formed into strong pipes or tubes. Pipes thus made are found to possess great solidity and unusual strength, and a fine uniformity, such as had never before been attained by any other mode. The essential difference in its character, and which distinguishes it from all other theretofore known, they add, is, that it is wrought under heat, by pressure and constriction, from set or solid metal.

They do not claim, as their invention or improvement, any of the parts of the machinery, independently of the arrangement and combination set forth.

"What we claim as our invention, they say, is, the combination of the following parts above described, to wit: the core and bridge or guide-piece, with the cylinder, the piston, the chamber, and die, when used to form pipes of metal under heat and pressure, in the manner set forth, or in any other manner substantially the same."

It is supposed that the patentees claim, as the novelty of their invention, the arrangement and combination of the machinery which they have described, disconnected from the employment of the new property of lead, which they have discovered, and by the practical application and use of which they have succeeded in producing the new manufacture. And the general title or description of their invention, given in the body of their letters-patent, is referred to as evidence of such claim. But every patent, whatever may be the general heading or title by which the invention is designated, refers to the specification annexed for a more particular description; and hence this court has heretofore determined, that the specification constitutes a part of the patent, and that they must be construed together when seeking to ascertain the discovery claimed. Hogg et al. *v.* Emerson, 6 How. 437.

The same rule of construction was applied by the Court of Exchequer, in England, in the case of Neilson's patent for the hot air blast. Webster's Cases, 373.

Now, on looking into the specification, we see, that the leading feature of the invention consists in the discovery of a new property in the article of lead, and in the employment and adaptation of it, by means of the machinery described, to the production of a new article, wrought pipe, never before successfully made. Without the discovery of this new property in the metal, the machinery or apparatus would be useless, and not the subject of a patent. It is in connection with this property, and the embodiment and adaptation of it to practical use, that the machinery is described, and the arrangement claimed. The discovery of this new element or property led naturally to the apparatus, by which a new and most useful result is produced. The apparatus was but incidental, and subsidiary to the new and leading idea of the invention. And hence, the patentees set forth, as the leading feature of it, the discovery, that lead, in a solid state, but under heat and extreme pressure in a close vessel, will reunite, after separation of its parts, as completely as though it had never been separated. It required very little ingenuity, after the experiments in a close vessel, by which this new property of the metal was first developed, to construct the necessary machinery for the formation of the pipe. The apparatus, essential to develop this property, would at once suggest the material parts, especially in the state of the art at the time. Any skilful mechanic, with Burr's machine before him, would readily construct the requisite machinery.

The patentees, therefore, after describing their discovery of this property of lead, and the apparatus by means of which they apply the metal to the manufacture of pipe, claim the combination of the machinery, only when used to form pipes under heat and pressure, in the manner set forth, or in any other manner substantially the same. They do not claim it as new separately, or when used for any other purpose, or in any other way; but claim it, only, when applied for the purpose and in the way pointed out in the specification. The combination, as machinery, may be old; may have been long used; of itself, what no one could claim as his invention, and may not be the subject of a patent. What is claimed is, that it never had been before applied or used, in the way and for the purpose they have used and applied it, namely, in the embodiment and adaptation of a newly-discovered property in lead, by means of which they are enabled to produce a new manufacture—wrought pipe—out of a mass of solid lead. Burr had attempted it, but failed. These patentees, after the lapse of seventeen years, having discovered

this new property in the metal, succeeded, by the use and employment of it, and since then, none other than wrought lead pipe, made out of solid lead, has been found in the market, having superseded, on account of its superior quality and cheapness, all other modes of manufacture.

Now the construction, which I understand a majority of my brethren are inclined to give to this patent, namely, that the patentees claim, as the originality of their invention, simply, the combination of the machinery employed, with great deference, seems to me contrary to the fair and reasonable import of the language of the specification, and also of the summary of the claim. The tendency of modern decisions is to construe specifications benignly, and to look through mere forms of expression, often inartificially used, to the substance, and to maintain the right of the patentee to the thing really invented, if ascertainable upon a liberal consideration of the language of the specification, when taken together. For this purpose, phrases standing alone are not to be singled out, but the whole are to be taken in connection. 1 Sumn. 482–485.

Baron Parke observed, in delivering the opinion of the court in Neilson's patent, "That, half a century ago, or even less, within fifteen or twenty years, there seems to have been very much a practice with both judges and juries to destroy the patent-right, even of beneficial patents, by exercising great astuteness in taking objections, either as to the title of the patent, but more particularly as to the specifications, and many valuable patent rights have been destroyed in consequence of the objections so taken. Within the last ten years or more, the courts have not been so strict in taking objections to the specifications, and they have endeavored to hold a fair hand between the patentee and the public, willing to give the patentee the reward of his patent."

Construing the patent before us in this spirit, I cannot but think, that the thing really discovered, and intended to be described, and claimed by these patentees, cannot well be mistaken. That they did not suppose the novelty of their invention consisted, simply, in the arrangement of the machinery described, is manifest. They state, distinctly, that the leading feature of their discovery consisted of this new property of lead, and some of its alloys, — this, they say, is the remarkable feature of their invention, — and the apparatus described is regarded by them as subordinate, and as important only as enabling them to give practical effect to this newly-discovered property, by means of which they produce the new manufacture. If they have failed to describe and claim this, as belonging to their invention, it is manifest, upon the face of their specification, that they have

failed to employ the proper words to describe and claim what they intended; and that the very case is presented, in which, if the court, in the language of Baron Parke, will endeavor to hold a fair hand between the patentee and the public, it will look through the forms of expression used, and discover, if it can, the thing really invented. Apply to the specification this rule of construction, and all difficulty at once disappears. The thing invented, and intended to be claimed, is too apparent to be mistaken.

The patentees have certainly been unfortunate in the language of the specification, if, upon a fair and liberal interpretation, they have claimed only the simple apparatus employed; when they have not only set forth the discovery of this property in the metal, as the great feature in their invention, but, as is manifest, without it the apparatus would have been useless. Strike out this new property from their description and from their claim, and nothing valuable is left. All the rest would be worthless. This lies at the foundation upon which the great merit of the invention rests, and without a knowledge of which the new manufacture could not have been produced; and, for aught we know, the world would have been deprived of it down to this day.

If the patentees had claimed the combination of the core and bridge or guide-piece, with the cylinder, the chambers, and the die, and stopped there, I admit the construction, now adopted by a majority of my brethren, could not be denied; although, even then, it would be obvious, from an examination of the specification as a whole, that the draughtsman had mistaken the thing really invented, and substituted in its place matters simply incidental, and of comparative insignificance. But the language of the claim does not stop here. The combination of these parts is claimed only when used to form pipes of lead, under heat and pressure, in the manner set forth, — that is, when used for the embodiment and adaptation of this new property in the metal for making wrought pipe out of a solid mass of lead. This guarded limitation of the use excludes the idea of a claim to the combination for any other, and ties it down to the instance, when the use incorporates within it the new idea or element which gives to it its value, and by means of which the new manufacture is produced. How, then, can it be consistently held, that here is a simple claim to the machinery, and nothing more, when a reasonable interpretation of the words not only necessarily excludes any such claim, but in express terms sets forth a different one, — one not only different in the conception of the invention, but different in the practical working of the apparatus, to accomplish the purpose intended?

I conclude, therefore, that the claim, in this case, is not simply for the apparatus employed by the patentees, but for the embodiment or employment of the newly-discovered property in the metal, and the practical adaption of it, by these means, to the production of a new result, namely, the manufacture of wrought pipe out of solid lead.

Then, is this the proper subject-matter of a patent? m

This question was first largely discussed by counsel and court in the celebrated case of Boulton *v.* Bull, (2 Hen. 31, 463,) involving the validity of Watts's patent, which was for "a new invented method for lessening the consumption of fuel and steam in fire-engines." This was effected by inclosing the steam vessel or cylinder with wood, or other material, which preserved the heat in the steam vessel; and by condensing the steam in separate vessels. It was admitted, on the argument, that there was no new mechanical construction invented by Watt, and the validity of the patent was placed on the ground that it was for well-known principles, practically applied, producing a new and useful result. On the other hand, it was conceded, that the application of the principles in the manner described was new, and produced the result claimed; but it was denied, that this constituted the subject-matter of a patent. Heath and Buller, Justices, agreed with the counsel for the defendant. But Lord Chief Justice Eyre laid down the true doctrine, and which, I think, will be seen to be the admitted doctrine of the courts of England at this day. "Undoubtedly," he observed, "there can be no patent for a mere principle; but for a principle, so far embodied and connected with corporeal substances as to be in a conditio to act, and to produce effects in any art, trade, mystery, or manual occupation, I think there may be a patent. Now, this," he continues, "is, in my judgment, the thing for which the patent stated in the case was granted; and this is what the specification describes, though it miscalls it a principle. It is not that the patentee conceived an abstract notion, that the consumption of steam in fire-engines may be lessened; but he has discovered a practical manner of doing it; and for that practical manner of doing it he has taken this patent. Surely," he observes, "this is a very different thing from taking a patent for a principle. The apparatus, as we have said, was not new. There is no new mechanical construction, said the counsel for the patentee, invented by Watt, capable of being the subject of a distinct specification; but his discovery was of a principle, the method of applying which is clearly set forth." Chief Justice Eyre admitted that the means used were not new, and that if the patent had been taken out for the mechanism used, it must fail.

He observed, "When the effect produced is some new substance or composition of things, it should seem that the privilege of the sole working or making ought to be for such new substances or composition, without regard to the mechanism or process by which it has been produced, which, though perhaps also new, will be only useful as producing the new substance." Again, "When the effect produced is no new substance, or composition of things, the patent can only be for the mechanism, if new mechanism is used; or for the process, if it be a new method of operating, with or without old mechanism, by which the effect is produced." And again, he observes, "If we wanted an illustration of the possible merit of a new method of operating with old machinery, we might look to the identical case before the court." p. 496, 493, 495.

This doctrine, in expounding the law of patents, was announced in 1795, and the subsequent adoption of it by the English courts, shows, that Chief Justice Eyre was considerably in advance of his associates upon this branch of the law. He had got rid, at an early day, of the prejudice against patents so feelingly referred to by Baron Parke in Neilson *v.* Harford, and comprehended the great advantages to his country if properly encouraged. He observed, in another part of his opinion, that "The advantages to the public from improvements of this kind are beyond all calculation important to a commercial country; and the ingenuity of artists, who turn their thoughts towards such improvements, is, in itself, deserving of encouragement."

This doctrine was recognized by the Court of King's Bench in the King *v.* Wheeler, 2 B. & Ald. 340, 350.

It is there observed, that the word "manufactures," in the patent act, may be extended to a mere process to be carried on by known implements or elements, acting upon known substances, and ultimately producing some other known substance, but producing it in a cheaper or more expeditious manner, or of a better or more useful kind.

Now, if this process to be carried on by known implements acting upon known substances, and ultimately producing some other known substance of a better kind, is patentable, *a fortiori* will it be patentable, if it ultimately produces not some other known substance, but an entirely new and useful substance.

In Forsyth's patent, which consists of the application and use of detonating powder as priming for the discharge of fire-arms, it was held that whatever might be the construction of the lock or contrivance by which the powder was to be discharged, the use of the detonating mixture as priming, which article of itself was not new, was an infringement. Webster's Pat. Cas. 94, 97, (n); Curtis on Pat. 230.

This case is founded upon a doctrine which has been recognized in several subsequent cases in England, namely, that where a person discovers a principle or property of nature, or where he conceives of a new application of a well-known principle or property of nature, and also, of some mode of carrying it out into practice, so as to produce or attain a new and useful effect or result, he is entitled to protection against all other modes of carrying the same principle or property into practice for obtaining the same effect or result.

The novelty of the conception consists in the discovery and application in the one case, and of the application in the other, by which a new product in the arts or manufactures is the effect; and the question, in case of an infringement, is, as to the substantial identity of the principle or property, and of the application of the same, and consequently the means or machinery made use of, material only so far as they affect the identity of the application.

In the case of Jupe's patent for "an improved expanding table," Baron Alderson observed, speaking of this doctrine, "You cannot take out a patent for a principle; you may take out a patent for a principle coupled with the mode of carrying the principle into effect. But then, you must start with having invented some mode of carrying the principle into effect; if you have done that, then you are entitled to protect yourself from all other modes of carrying the same principle into effect, that being treated by the jury as piracy of your original invention." Webster's Pat. Cases, 147. The same doctrine was maintained also in the case of Neilson's patent for the hot air blast, in the K. B. and Exchequer in England. Webster's Pat. Cases, 342, 371; Curtis, § 74, 148, 232; Webster's Pat. Cases, 310.

This patent came also before the Court of Sessions in Scotland; and in submitting the case to the jury, the Lord Justice remarked, "That the main merit, the most important part of the invention, may consist in the conception of the original idea — in the discovery of the principle in science, or of the law of nature, stated in the patent; and little or no pains may have been taken in working out the best mode of the application of the principle to the purpose set forth in the patent. But still, if the principle is stated to be applicable to any special purpose, so as to produce any result previously unknown, in the way and for the objects described, the patent is good. It is no longer an abstract principle. It becomes to be a principle turned to account, to a practical object, and applied to a special result. It becomes, then, not an abstract principle, which means a principle considered apart from any special purpose or practical operation, but the discovery and statement of a principle for a

special purpose, that is, a practical invention, a mode of carrying a principle into effect. That such is the law," he observes, "if a well-known principle is applied for the first time to produce a practical result for a special purpose, has never been disputed, and it would be very strange and unjust to refuse the same legal effect, when the inventor has the additional merit of discovering the principle, as well as its application to a practical object."

Then he observes, again, "Is it an objection to the patent that in its application of a new principle to a certain specified result, it includes every variety of mode of applying the principle according to the general statement of the object and benefit to be attained? This," he observes, "is a question of law, and I must tell you distinctly, that this generality of claim, that is, for all modes of applying the principle to the purpose specified, according to, or within a general statement of the object to be attained, and of the use to be made of the agent to be so applied, is no objection to the patent. The application or use of the agent for the purpose specified, may be carried out in a great variety of ways, and only shows the beauty and simplicity, and comprehensiveness of the invention."

This case was carried up to the House of Lords on exceptions to the charge, and among others, to this part of it, which was the sixth exception, and is as follows: "In so far as he (the Judge) did not direct the jury, that on the construction of the patent and specification, the patentee cannot claim or maintain that his patent is one which applies to all the varieties in the apparatus which may be employed in heating air while under blast; but was limited to the particular described in the specification." And although the judgment of the court was reversed in the House of Lords on the eleventh exception, it was expressly affirmed as respects this one. Lord Campbell at first doubted, but after the decision of the courts in England on this patent, he admitted the instruction was right. Webster, Pat. Cases, 683, 684, 698, 717.

I shall not pursue a reference to the authorities on this subject any further. The settled doctrine to be deduced from them, I think, is, that a person having discovered the application for the first time of a well-known law of nature, or well-known property of matter, by means of which a new result in the arts or in manufactures is produced, and has pointed out a mode by which it is produced, is entitled to a patent; and, if he has not tied himself down in the specification to the particular mode described, he is entitled to be protected against all modes by which the same result is produced, by an application of the same law of nature or property of matter. And *a fortiori*, if he has

discovered the law of nature or property of matter, and applied it, is he entitled to the patent, and aforesaid protection.

And why should not this be the law? The original conception — the novel idea in the one case, is the new application of the principle or property of matter, and the new product in the arts or manufactures — in the other, in the discovery of the principle or property, and application, with like result. The mode or means are but incidental, and flowing naturally from the original conception; and hence of inconsiderable merit. But, it is said, this is patenting a principle, or element of nature. The authorities to which I have referred, answer the objection. It was answered by Chief Justice Eyre, in the case of Watts's patent, in 1795, fifty-seven years ago; and more recently in still more explicit and authoritative terms. And what if the principle is incorporated in the invention, and the inventor protected in the enjoyment for the fourteen years. He is protected only in the enjoyment of the application for the special purpose and object to which it has been newly applied by his genius and skill. For every other purpose and end, the principle is free for all mankind to use. And, where it has been discovered, as well as applied to this one purpose, and open to the world as to every other, the ground of complaint is certainly not very obvious. Undoubtedly, within the range of the purpose and object for which the principle has been for the first time applied, piracies are interfered with during the fourteen years. But any body may take it up and give to it any other application to the enlargement of the arts and of manufactures, without restriction. He is only debarred from the use of the new application for the limited time, which the genius of others has already invented and put into successful practice. The protection does not go beyond the thing which, for the first time, has been discovered and brought into practical use; and is no broader than that extended to every other discoverer or inventor of a new art or manufacture.

I own, I am incapable of comprehending the detriment to the improvements in the country that may flow from this sort of protection to inventors.

To hold, in the case of inventions of this character, that the novelty must consist of the mode or means of the new application producing the new result, would be holding against the facts of the case, as no one can but see, that the original conception reaches far beyond these. It would be mistaking the skill of the mechanic for the genius of the inventor.

Upon this doctrine, some of the most brilliant and useful inventions of the day by men justly regarded as public benefactors, and whose names reflect honor upon their country — the suc-

cessful application of steam power to the propulsion of vessels and railroad cars — the application of the electric current for the instant communication of intelligence from one extremity of the country to the other — and the more recent, but equally brilliant conception, the propulsion of vessels by the application of the expansibility of heated air, the air supplied from the atmosphere that surrounds them. It would be found, on consulting the system of laws established for their encouragement and protection, that the world had altogether mistaken the merit of their discovery; that, instead of the originality and brilliancy of the conception that had been unwittingly attributed to them, the whole of it consisted of some simple mechanical contrivances which a mechanician of ordinary skill could readily have devised. Even Franklin, if he had turned the lightning to account, in order to protect himself from piracies, must have patented the kite, and the thread, and the key, as his great original conception, which gave him a name throughout Europe, as well as at home, for bringing down this element from the heavens, and subjecting it to the service of man. And if these simple contrivances, taken together, and disconnected from the control and use of the element by which the new application, and new and useful result may have been produced, happen to be old and well known, his patent would be void; or, if some follower in the tract of genius, with just intellect enough to make a different mechanical device or contrivance, for the same control and application of the element, and produce the same result, he would, under this view of the patent law, entitle himself to the full enjoyment of the fruits of Franklin's discovery.

If I rightly comprehend the ground upon which a majority of my brethren have placed the decision, they do not intend to controvert so much the doctrine which I have endeavored to maintain, and which, I think, rests upon settled authority, as the application of it to the particular case. They suppose that the patentees have claimed only the combination of the different parts of the machinery described in their specification, and therefore, are tied down to the maintenance of that as the novelty of their invention. I have endeavored to show, that this is a mistaken interpretation; and that they claim the combination, only, when used to embody and give a practical application to the newly-discovered property in the lead, by means of which a new manufacture is produced, namely, wrought pipe out of a solid mass of lead; which it is conceded, was never before successfully accomplished.

For these reasons, I am constrained to differ with the judgment they have arrived at, and am in favor of affirming that of the court below

Order.

This cause came on to be heard on the transcript of the record from the Circuit Court of the United States for the Southern District of New York, and was argued by counsel. On consideration whereof, it is now here ordered and adjudged, by this court, that the judgment of the said Circuit Court in this cause be, and the same is hereby, reversed, with costs, and that this cause be, and the same is hereby, remanded to the said Circuit Court, with directions to award a *venire facias de novo.*

THE UNITED STATES, APPELLANTS, *v.* THE HEIRS OF VINCENT RILLIEUX, DECEASED.

This court again decides, as in 11 Howard, 580, that under the acts of Congress of 1824 and 1844, the District Court had no power to act upon evidence of mere naked possession, unaccompanied by written evidence conferring, or professing to confer, a title of some description.

By the treaty of 1763, the land in question passed from France to Great Britain; and the certificate of two French officers in 1765, certifying that the claimant had been for a long time in possession, furnished no evidence of title. No application was made to the British government for a grant.

A purchase from the Indians, whilst the province was under French authority, conveyed no title unless sanctioned by that authority.

In this case, also, there is no proof that the claimants are the heirs of the party originally in possession.

THIS was an appeal from the District Court of the United States, for the Eastern District of Louisiana. The petition was filed in that court by the heirs of Rillieux, under the act of June 17th, 1844, (5 Stat. at Large, 676,) which court decreed in favor of the petitioners. The United States appealed to this court, where it was argued by *M. Bibb* and *Mr. Crittenden*, (Attorney-General,) for the appellants. No counsel appeared for the appellees.

Mr. Justice CATRON delivered the opinion of the court.

The petitioners aver, that they are the lawful heirs of Vincent Rillieux and Marie Tronquet his wife; and as such heirs, are the true and lawful owners of a tract of land in the parish of St. Tammany, State of Louisiana, "bounded on the South side by Lake Ponchartrain; on the East by Pearl River; on the West by the bayou Bonfouca; and on the North by a line running from the western source of said bayou, and from the head waters of the same to Pearl River"—containing an extent of about one hundred thousand acres.

It is alleged, that this tract of land was purchased in part by